CLAIMS

1. A guitar and violin hybrid instrument comprising:

a) a body comprising:

(1) an upper surface, a lower surface, an upper end, a lower end, a left half and a right half,

(2) an electronics cavity and cover located on the lower surface,

(3) a piezoelectric pick-up bore,

(4) a plurality of string attachment bores that extend through said body into the electronics cavity, and

b) a bridge having:

(1) a laterally-bowed upper surface, a flat lower surface, having means for being attached to the upper surface of said body, a left side, a right side, a first end, a second end, a plurality of string bores in alignment with the plurality of string attachment bores on said body, and a piezoelectric lead bore in alignment with the piezoelectric pick-up bore on said body,

(2) a plurality of saddles adjustably attached to the upper surface of said bridge, wherein each said saddle comprises a string groove and a piezoelectric pick-up cavity that is located adjacent each of the string slots,

(3) a piezoelectric pick-up inserted into each said piezoelectric pick-up cavity wherein each said piezoelectric pick-up has an output lead that is inserted sequentially through the respective piezoelectric lead bore, the piezoelectric pick-up bore and into the electronics cavity,

c) a neck comprising:

(1) an outer end, an inner end, an upper surface and a lower surface wherein the inner end having means for being attached to the upper surface adjacent to the upper end of said body,

(2) a headstock having an upper edge and a lower edge, wherein the

lower edge is integrally formed with the outer end of said neck, said headstock further having:

(a) a plurality of tuning pegs,

(b) a fretboard having an inner end, an outer end and that is dimensioned to cover the upper surface of said neck,

(c) a multiplicity of frets distributed between the inner end and the outer end of said fretboard,

(d) a nut having a plurality of string grooves and that is located between the outer end of said neck and the lower edge of said headstock,

d) a set of strings strung from said plurality of string attachment bores, across said body and said fretboard, through the plurality of string grooves on said nut and onto said plurality of tuning pegs that function to adjust the tension of said strings,

e) an electronics circuit located within the electronics cavity, said circuit having means for controlling and operating said guitar and violin hybrid instrument, and

f) a bow used to strum said set of strings when said instrument functions as a violin.

2. The electronics circuit as specified in claim 1 further comprising:

a) a plurality of piezoelectric pickups (Y) located and positioned on said bridge to intercept the vibrations produced by each of said strings, wherein each said piezoelectric pickup having means for producing an output signal corresponding to the particular string associated with the particular piezoelectric pickup,

b) a piezoelectric pickup mixer (M1) having means for receiving each of the output signals from said plurality of piezoelectric pickups, and producing a balanced db output signal,

c) a plurality of magnetic pickups (G) located and optimally positioned on said body to intercept the vibration produced by each of said strings, wherein each said magnetic pickup having means for producing a magnetic output signal corresponding to the particular string associated with the particular magnetic pickup,

d) a PAN control (R1) that is operated by a PAN control knob, has a first input, a second input and a PAN output signal, wherein the first input is applied the balanced db

output signal from said pickup mixer (M1), the second input is applied the magnetic output signals from said plurality of magnetic pickups (G1), wherein the PAN output signal is dependent upon the position of the PAN control knob, wherein when the PA control knob is rotated fully clockwise (CW) the PAN output signal is determined by the magnetic output signal produced by said magnetic pickup (G), conversely, when the PAN control knob is rotated fully counter-clockwise (CCW), the PAN output signal is determined by the output signal produced by said piezoelectric pickup mixer (M1), wherein when the PAN control knob is positioned midway between the CW and CCW positions, the PAN output signal is comprised of a composite PAN output signal that is further comprised of both the outputs from said piezoelectric pickup mixer (M1) and said magnetic pickup (G),

e) a volume control (R2) having an input that is applied the output signal from said PAN control (R1) ad means for producing a selectable db-level signal, and

f) a power source selected to supply the required power level to the pickup mixer (M).

3. The guitar and violin hybrid instrument as specified in claim 1 wherein said body is solid.

4. The guitar and violin hybrid instrument as specified in claim 1 wherein said body is hollow.

5. The guitar and violin hybrid instrument as specified in claim 1 wherein said body further comprises a plurality of contours located around the perimeter of said left half of said right half.

6. The guitar and violin hybrid instrument as specified in claim 5 wherein one of said plurality of contours is comprised of a leg contour located on a lower section of the left half, wherein said leg contour provides a comfortable leg support when playing the instrument.

7. The guitar and violin hybrid instrument as specified in claim 1 wherein said bridge is made of wood.

8. The guitar and violin hybrid instrument as specified in claim 1 wherein said bridge is made of a composite material.

9. The guitar and violin hybrid instrument as specified in claim 1 wherein said bridge is made of plastic.

10. The guitar and violin hybrid instrument as specified in claim 1 wherein the laterally-bowed upper surface of said bridge has a curvature radius of

11. The guitar and violin hybrid instrument as specified in claim 1 wherein said neck is made of a hardwood or a composite material.

12. A guitar and violin hybrid instrument comprising:

a) a body comprising:

(1) an upper surface, a lower surface, an upper end, a lower end, a left half and a right half,

(2) an electronics cavity located on the lower surface,

(3) a removably attached cavity cover,

(4) a piezoelectric pick-up bore,

(5) a plurality of control knob bores and pickup bores, wherein the bores extend from the upper surface into the electronics cavity,

(6) a plurality of string attachment bores that extend through said body into the electronics cavity, and

b) a bridge having:

(1) a laterally-bowed upper surface, a flat lower surface having means for being attached to the upper surface of said body, a left side, a right side, a first end, and second end,

(2) a plurality of string bores having a string slope that slopes toward the first end, wherein said string bores are in alignment with the plurality of string attachment bores on said body,

(3) a plurality of saddle cavities that extend laterally across the left and right sides and adjacent the first end, wherein each said saddle cavity having a piezoelectric lead bore,

c) a plurality of saddles inserted into the plurality of saddle cavities, wherein each said saddle having:

(1) means for being longitudinally positioned,

(2) an upper longitudinal string groove,

(3) a piezoelectric pick-up cavity located adjacent each of the string grooves, and

d) a plurality of piezoelectric pick-ups inserted into each of the piezoelectric pick-up cavities, wherein each said piezoelectric pick-up has an output lead that is inserted sequentially through the respective piezoelectric lead bore located on said saddle cavity, the piezoelectric pick-up bore located on said body and into the electronics cavity,

e) a neck comprising:

(1) an outer end, an inner end, an upper surface and a lower surface wherein the inner end having means for being attached to the upper surface, adjacent to the upper end, of said body,

(2) a headstock having an upper edge and a lower edge, wherein the lower edge is integrally formed with the outer end of said neck, said headstock further having a plurality of tuning peg bores into which are inserted a like plurality of tuning pegs,

(3) a fretboard having an inner end, an outer end and that is dimensioned to fit over and be attached by an attachment means to the upper surface of said neck,

(4) a multiplicity of frets distributed between the inner end and the outer end of said fretboard,

(5) a nut having a plurality of string grooves and that is located between

the outer end of said neck and the lower edge of said headstock,

f) a set of strings strung from the lower surface of said body, through said plurality of string attachment bores, across said body and said fretboard, through the plurality of string grooves on said nut and onto said plurality of tuning pegs that function to adjust the tension of said strings,

g) an electronics circuit located within the electronics cavity, said circuit comprising:

(1) said plurality of piezoelectric pickups (Y) located and positioned on said bridge to intercept the horizontal motion associated with the bowed vibrations produced by each of said strings, wherein each said piezoelectric pickup having means for producing an output signal corresponding to the particular string associated with the particular piezoelectric pickup,

(2) a piezoelectric pickup mixer (M1) having means for receiving each of the output signals from said plurality of piezoelectric pickups, and producing a balanced db output signal,

(3) a plurality of magnetic pickups (G) located and optimally positioned on said body to intercept the vibration produced by each of said strings, wherein each said magnetic pickup having means for producing a magnetic output signal corresponding to the particular string associated with the particular magnetic pickup,

(4) a PAN control (R1) that is operated by a PAN control knob, has a first input, a second input and a PAN output signal, wherein the first input is applied the balanced db output signal from said pickup mixer (M1), the second input is applied the magnetic output signals from said plurality of magnetic pickups (G1), wherein the PAN output signal is dependent upon the position of the PAN control knob, wherein when the PAN control knob is rotated fully clockwise (CW) the PAN output signal is determined by the magnetic output signal produced by said magnetic pickup (G), conversely, when the PAN control knob is rotated fully counter-clockwise (CCW), the PAN output signal is determined by the output signal produced by said piezoelectric pickup mixer (M1), wherein when the PAN control knob is positioned midway between the CW and CCW positions, the PAN output signal is comprised of a composite PAN output signal that is further comprised of both the outputs from by said piezoelectric pickup mixer (M1) and

said magnetic pickup (G),

(5) a volume control (R2) having an input that is applied the output signal from said PAN control (R1) and means for producing a selectable db-level signal,

(6) a treble control (R3) that is operated by a treble control knob that is positioned to produce a selectable treble output signal,

(7) a bass control (R4) that is operated by a bass control knob that is positioned to produce a selectable bass output signal,

(8) a treble/bass mixer (M2) having a first input that is applied the selectable db-level signal from said volume control (R2), a second input that is applied the selectable treble output signal from said treble control (R3), a third input that is applied the bass output signal from said bass control (R4), and an output consisting of a composite audio signal that is applied via an output jack to an external audio amplifier, and

(9) a power source selected to supply the power levels required to power the electrical elements of said electronic circuit, and

h) a bow used to strum said set of strings when said instrument functions as a violin.

13. The guitar and violin hybrid instrument as specified in claim 12 wherein said body further comprises a plurality of contours located around the perimeter of said left half and said right half.

14. The guitar and violin hybrid instrument as specified in claim 13 wherein one of said plurality of contours is comprised of a leg contour located on a lower section of the left half, wherein said leg contour provides a comfortable leg support for the instrument while the instrument in being played in a seated position.

15. The guitar and violin hybrid instrument as specified in claim 12 wherein said body is solid.

16. The guitar and violin hybrid instrument as specified in claim 12 wherein said body is hollow.

17. The guitar and violin hybrid instrument as specified in claim 12 wherein said bridge is made of wood.

18. The guitar and violin hybrid instrument as specified in claim 12 wherein said bridge is made of a composite material.

19. The guitar and violin hybrid instrument as specified in claim 12 wherein said bridge is made of plastic.

20. The guitar and violin hybrid instrument as specified in claim 12 wherein the laterally-bowed upper surface of said bridge has a curvature radius of 2.0 - 3.0 inches (5.08 - 7.62 m).

21. The guitar and violin hybrid instrument as specified in claim 12 wherein said means for attaching the inner end of said neck to said body comprises an inward-extending step that extends from the inner end of said neck, wherein said step is dimensioned to allow said neck to rest upon the upper surface and adjacent the upper end of said body and be attached thereto by the attachment means.

22. The guitar and violin hybrid instrument as specified in claim 21 wherein said neck attachment means comprises an adhesive.

23. The guitar and violin hybrid instrument as specified in claim 21 wherein said neck attachment means comprises a set of screws.

24. The guitar and violin hybrid instrument as specified in claim 12 wherein the power source that is utilized to supply the required power levels to the powered elements is comprised of a 9-volt battery.